

"System for securing a monoblock window to a vehicle body"

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The present invention relates to a system for securing a window to a vehicle body.

The invention is particularly applicable to windows of the type normally used on vehicles meant for  
10 passenger transportation.

In general, the windows consist of a framework comprising two sections of glass or plate glass. A first fixed section is integral with the vehicle body opening.

15 The moving section partially or totally overlaps said adjacent fixed glass.

Several systems for securing windows to the vehicle body opening are known; in such systems, the outer glass is installed on a metal chassis which differs  
20 in shape and size depending on the kind of connection used to implement the securing itself.

A first known system envisages the use of a counterchassis to oppose the chassis supporting the outer glass; such counterchassis rests on the inner  
25 part of the vehicle body opening and is connected to

the former through fastening means such as clamp screws.

Such method was chosen because it allows an easy disassembly of the window glass framework and facilitates operations of maintenance and/or replacement of the same.

It also provides a wide tolerance in the selection of the materials used at the design stage for the implementation of the profiles of said chassis.

10 However, even considering such benefits, said prior art system has a considerable drawback. As a matter of fact, it implements a body side profile which appears to be significantly heavy due to the interposition of projecting metal draw pieces.

15 As a consequence, seen from the outside, the body side of a vehicle using a window securing system of the type described above does not appear to meet the needs for pleasant look and careful finishing which are currently wished by users, requiring the coplanarity between the glass surface and the vehicle outer body.

A second known securing system differs from the first one since the chassis supporting the outer glass does not rest on the outer surface of the vehicle body side, but is directly connected to the inner

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counterchassis.

In order to ensure the proper distribution of stresses and the stability of the framework, the outer glass is glued to the outer surface of the vehicle body opening.

Such securing method ensures the desired planarity between the surface of the outer glass and the outer surface of the vehicle body opening, thus providing the assembly with a streamlined design, not made heavier by projecting metal draw pieces.

This brief analysis clearly shows, however, that also such second system presents a significant problem, namely the considerable increase of the costs for the window maintenance and disassembly.

As a matter of fact, this system envisages the use of steady connection means, thus involving an extension of the time needed to remove such connection means, as well as an increase of the costs for the material being used.

The problem which the present invention means to tackle is the implementation of an securing system ensuring an optimal streamlined style along with user-friendliness, without however bringing prejudice to the illuminance of the glass surface.

Such problem is solved by a system for securing a

window to a vehicle body according to claim 1, to which reference is made for the sake of brevity.

The invention is described in detail here below, by way of example but not by way of limitation,  
5 reference being made to the attached drawings, wherein:

- Figure 1 shows a sectional view of a first system for securing a window, along a vertical plane perpendicular to the vehicle body side,  
10 according to prior art;
- Figure 2 shows a sectional view of a second system for securing a window, along a vertical plane perpendicular to the vehicle body side, according to prior art;
- 15 - Figure 3 shows a sectional view of the system for securing a window, along a vertical plane perpendicular to the vehicle body side, according to the present invention; and
- Figure 4 shows a horizontal sectional view,  
20 perpendicular to the vehicle body side, of the system for securing a window, turned towards the lower draw piece of the frame of the window itself, according to the present invention.

In particular Figure 1, depicting a first securing  
25 system according to prior art, highlights the outer

glass 1, mounted on the chassis 21 which is connected to the counterchassis 22 through clamp screws 23; the system is installed on the vehicle body opening 13 by interposing shims 24.

5 Figure 2, depicting a second securing system according to prior art, highlights the gluing 25 through which the glass 1 is connected to the vehicle body opening 13.

The securing system which is the subject-matter of  
10 the present invention is used to implement the upper part of the window framework.

An illustrative embodiment of the system for securing a window to a vehicle body according to the present invention is shown in its entirety under reference  
15 number 10.

The securing system 10 comprises, as illustrated in Figure 3, an outer glass 1 which is supported by a window chassis 2 and which can, by way of example, be glued thereto 3.

20 A gasket for condensate recovery 4 can be included among said elements and housed within a specially-shaped throat 5 formed into the profile of the window chassis 2.

Figure 3, referring to the upper part of the window,  
25 whereas the previous figures relate to the lower

part, also shows a Z-shaped draw piece 6; this consists of an outer portion 7 and an inner wing 9, both connected by a stem 8, the whole forming a single piece.

5 Such Z-shaped draw piece 6 is fit, as will be better illustrated below, to implement a connection with the window framework, consisting of the window chassis 2 and the outer glass 1.

Said Z-shaped draw piece 6 is provided with special  
10 steps and notches allowing it to be steadily fixed to the vehicle body opening 13 through gluing or through mechanical connection means.

The outer portion 7 of the Z-shaped draw piece 6 is formed so as to be coplanar at the same time to the  
15 outer glass 1, to the surface of the vehicle body outer side 12 and to any possible outer profile 11 of the window chassis 2.

In this way the desired streamlined style is obtained, while keeping the stability of the  
20 structure as a whole.

The inner wing 9 of the Z-shaped draw piece 6 includes a housing 14 for the screws, allowing the window chassis 2 to be fastened to said draw piece 6.

The window chassis 2 is also connected to the draw  
25 piece 6 through the interposition of the gasket 15

fit to provide the centering, the watertightness and the support of the window framework in the opening.

It is also possible, should the particular shape of the vehicle body opening require so, provide the Z-shaped draw piece 6 with a fastening foot 16 in order  
5 to improve the structural stability of the securing system, as illustrated in Figure 3.

Lastly, Figure 4 shows a horizontal sectional view of the upper portion of the window framework, to which  
10 the securing system which is the subject-matter of the present invention is applied. The following elements stand out therein: the outer glass 1, the window chassis 2 to which said glass 1 is fastened through gluing 3 and the Z-shaped draw piece 6  
15 connected to the vehicle body opening 13, in a particular example of embodiment, through gluing 26.

As can be inferred from the description, the preparation of said Z-shaped draw piece 6 allows the glass to be assembled and disassembled without  
20 incurring the above problems due to the gluing between the glass and the vehicle body.

The system of the invention is, however, very inexpensive and cost-effective.

From the foregoing it appears obvious that the  
25 inventive concepts set forth are not limited to the

illustrated application example, but can be  
advantageously adjusted to other, similar  
applications. The present invention is therefore open  
to a number of modifications and variations, all  
5 falling within the inventive concept set forth in the  
claims attached hereto, whereas the technical details  
can change depending on specific needs.